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HAN, CLEMENCE S

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 42 is rejected under 35 U.S.C. 102(e) as being anticipated by Rochberger et al. (US 6,594,235).

Regarding to claim 42, Rochberger teaches a method for rerouting a connection in a data communication network, comprising: detecting a fault in the connection in the user plane (step 50 in Figure 4); and triggering a reroute of the connection in the control plane based on the fault detected (step 60 in Figure 4), wherein triggering a reroute further comprises evaluating a new connection (step 62 in Figure 4) such that rerouting to the new connection occurs when the new connection provides better latency performance than the connection ("YES" from the decision step 62 in Figure 4).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-9, 12-15, 23-26, 28-31, 35-40, 43 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rochberger et al. in view of Srinivasan et al. (US 6,304,549).

5. Regarding to claim 1, Rochberger teaches a method for rerouting a connection in a data communication network, comprising: establishing the connection in the data communication network (Column 9 Line 41-44), wherein the connection is managed by a control plane ("signaling" in Column 11 Line 55-65); monitoring status of a selected characteristic of the connection using a user connection monitoring function (step 50 in Figure 4); and when the status of the selected characteristic is determined to be unacceptable, initiating control plane rerouting of the connection (step 60 in Figure 4), wherein initiating control plane rerouting of the connection comprises evaluating a new connection (step 62 in Figure 4) before the connection is abandoned (step 64 in Figure 4), wherein the rerouting over the new connection occurs when a selected characteristic of the new connection is better than the selected characteristic of the connection ("YES" from the decision step 62 in Figure 4). Rochberger, however, does not teach the user connection monitoring function includes OAM continuity checking. Srinivasan teaches the user connection monitoring function includes OAM continuity checking (Column 16 Line 58-66). It would have been obvious to one skilled in the art to modify Rochberger to use OAM continuity checking as taught by Srinivasan in order to detect link failure (Column 16 Line 58-62).

Regarding to claim 2, Srinivasan teaches the selected characteristic includes continuity on the connection (Column 17 Line 1-4).

Regarding to claim 3, Srinivasan teaches the selected characteristic includes at least one of: data corruption on the connection, data loss on the connection, latency along the connection, and misinsertion of data on the connection (Column 2 Line 57-61).

Regarding to claim 4, Srinivasan teaches the data communication network supports asynchronous transfer mode (ATM) protocol (Column 5 Line 2-8).

Regarding to claim 5, Srinivasan teaches the control plane is a signaling plane (Column 5 Line 43 – Column 6 Line 12, see Figure 3).

Regarding to claim 6, Srinivasan teaches the signaling plane uses private network-to-network interface (PNNI) 56.

Regarding to claim 7, Srinivasan teaches the connection is a soft permanent virtual connection (SPVC) (Column 2 Line 32).

Regarding to claim 8, Srinivasan teaches the connection is a switched connection (Figure 1).

Regarding to claim 9, Srinivasan teaches the user connection monitoring function utilizes operation and management (OAM) traffic (Column 16 Line 58-62).

Regarding to claim 12, Srinivasan teaches the user connection monitoring function includes OAM performance monitoring (Column 16 Line 58-66).

Regarding to claim 13, Rochberger teaches determining that the status of the selected characteristic is unacceptable further comprises determining that a property of the selected characteristic exceeds a predetermined threshold (Column 11 Line 39-42).

Regarding to claim 14, Rochberger the selected characteristic further comprises a plurality of selected characteristics, wherein each selected characteristic of the plurality of selected characteristics has a corresponding predetermined threshold, wherein determining that the status of the selected characteristic is unacceptable includes determining that a property corresponding to at least one selected characteristic of the plurality of selected characteristics exceeds the corresponding predetermined threshold for the at least one selected characteristics (Column 11 Line 18-26).

Regarding to claim 15, Rochberger teaches at least a portion of the corresponding predetermined thresholds for the plurality of selected characteristics is configurable (Column 11 Line 44-46).

Regarding to claim 23, Rochberger teaches a data communication network, comprising: a source node 12; a destination node 14 operably coupled to the source node via a first connection that carries a data stream, wherein the source node injects diagnostic traffic into the data stream, wherein the destination node monitors the diagnostic traffic (step 50 in Figure 4) in the data stream; and a control block 12, 14 operably coupled to the source node and the destination node, wherein when status of a selected characteristic associated with the diagnostic traffic is determined to be unacceptable, the control block performs a control plane reroute that establishes a second connection that couples the source node and the destination node (step 60 in Figure 4) wherein the diagnostic traffic verifies that a level of user plane performance that has been guaranteed to a user is being provided (step 62 in Figure 4), wherein the

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control block performs an evaluation of the second connection (step 62 in Figure 4), wherein the data stream is rerouted over the second connection only if a status of the second connection's selected characteristic is better than the status of the selected characteristic ("YES" from the decision step 62 in Figure 4). Rochberger, however, does not teach the diagnostic traffic includes operation and management (OAM) performance monitoring traffic. Srinivasan teaches the diagnostic traffic includes operation and management (OAM) performance monitoring traffic (Column 16 Line 58-66). It would have been obvious to one skilled in the art to modify Rochberger to use OAM performance monitoring traffic as taught by Srinivasan in order to detect link failure (Column 16 Line 58-62).

Regarding to claim 24, Srinivasan teaches the data stream includes a plurality of asynchronous transfer mode (ATM) cells (Column 5 Line 2-8).

Regarding to claim 25, Srinivasan teaches the diagnostic traffic includes operation and management (OAM) continuity checking traffic (Column 16 Line 58-66).

Regarding to claim 26, Rochberger teaches detecting a loss of continuity for a predetermined time period (step 58 in Figure 4).

Regarding to claim 28, Rochberger teaches the status of the selected characteristic is determined to be unacceptable when a property associated with performance monitoring exceeds a predetermined threshold (Column 11 Line 39-42). Srinivasan teaches OAM (Column 16 Line 58-62)

Regarding to claim 29, Rochberger teaches the predetermined threshold is configurable (Column 11 Line 44-46).

Regarding to claim 30, Srinivasan teaches the first and second connections are soft permanent virtual circuits (Column 2 Line 32).

Regarding to claim 31, Srinivasan teaches the first and second connections are switched connections (Figure 1).

Regarding to claim 35, Srinivasan teaches the selected characteristic includes at least one of: data corruption on the first connection, data loss on the first connection, latency along the first connection, and misinsertion of data on the first connection (Column 2 Line 57-61).

Regarding to claim 36, Rochberger teaches a method for rerouting a connection in a data communication network, comprising: establishing the connection in the data communication network (Column 9 Line 41-44), wherein the connection is managed by a control plane ("signaling" in Column 11 Line 55-65); and when status of the at least one characteristic is determined to be unacceptable (step 50 in Figure 4), initiating control plane rerouting of the connection (step 60 in Figure 4) wherein the control plane rerouting of the connection comprises evaluating a new connection (step 62 in Figure 4) such that rerouting to the new connection occurs when at least one characteristic of the new connection is better than the at least one characteristic of the connection ("YES" from the decision step 62 in Figure 4). Rochberger, however, does not teach using operation and management (OAM) cells to monitor at least one characteristic of the connection; wherein the OAM traffic comprises OAM continuity checking traffic, wherein the at least one characteristic includes continuity. Srinivasan teaches using operation and management (OAM) cells to monitor at least one characteristic of the connection

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(Column 16 Line 58-62); wherein the OAM traffic comprises OAM continuity checking traffic, wherein the at least one characteristic includes continuity (Column 16 Line 58-66). It would have been obvious to one skilled in the art to modify Rochberger to use operation and management (OAM) cells to monitor at least one characteristic of the connection; wherein the OAM traffic comprises OAM continuity checking traffic, wherein the at least one characteristic includes continuity as taught by Srinivasan in order to detect link failure (Column 16 Line 58-62).

Regarding to claim 37, Srinivasan teaches the connection is a soft permanent virtual connection (SPVC) (Column 2 Line 32).

Regarding to claim 38, Srinivasan teaches the connection is switched virtual connection (SVC) (Column 7 Line 61-65).

Regarding to claim 39, Srinivasan teaches the control plane is a signaling plane (Column 5 Line 43 – Column 6 Line 12, see Figure 3).

Regarding to claim 40, Srinivasan teaches the signaling plane uses private network-to-network interface (PNNI) 56.

Regarding to claim 43, Rochberger teaches a method for rerouting a connection in a data communication network, comprising: detecting a fault in the connection in the user plane (step 50 in Figure 4); and triggering a reroute of the connection in the control plane based on the fault detected (step 60 in Figure 4). Wherein triggering a reroute further comprises evaluating a new connection (step 62 in Figure 4) such that rerouting to the new connection occurs when the new connection provides better latency performance than the connection (“YES” from the decision step 62 in Figure 4).

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Rochberger, however, does not teach detecting a fault using operation and management (OAM) services running within the user plane. Srinivasan teaches detecting a fault using operation and management (OAM) services running within the user plane (Column 16 Line 58-62). It would have been obvious to one skilled in the art to modify Rochberger to use OAM service as taught by Srinivasan in order to detect link failure (Column 16 Line 58-62).

Regarding to claim 44, Srinivasan teaches the connection is a soft permanent virtual connection (SPVC) (Column 2 Line 32).

6. Claims 18-22 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rochberger et al. in view of Srinivasan et al. and further in view of Gan et al. (US Pub. 2009/0040921).

Regarding to claim 18, Rochberger teaches a method for rerouting a connection in a data communication network, comprising: establishing the connection in the data communication network (Column 9 Line 41-44), wherein the connection is managed by a control plane ("signaling" in Column 11 Line 55-65); monitoring status of a selected characteristic of the connection using a user connection monitoring function (step 50 in Figure 4); and when the status of the selected characteristic is determined to be unacceptable, initiating control plane rerouting of the connection (step 60 in Figure 4), wherein initiating control plane rerouting of the connection comprises evaluating a new connection (step 62 in Figure 4) before the connection is abandoned (step 64 in Figure 4), wherein the rerouting over the new connection occurs when a selected characteristic of the new connection is better than the selected characteristic of the connection ("YES"

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from the decision step 62 in Figure 4). Rochberger, however, does not teach the user connection monitoring function includes OAM continuity checking. Srinivasan teaches the user connection monitoring function includes OAM continuity checking (Column 16 Line 58-66). It would have been obvious to one skilled in the art to modify Rochberger to use OAM continuity checking as taught by Srinivasan in order to detect link failure (Column 16 Line 58-62). Rochberger in view of Srinivasan, however, does not teach the data communication network supports Multi-Protocol Label Switching (MPLS). Gan teaches the data communication network supports MPLS [0040]. It would have been obvious to one skilled in the art to modify Rochberger in view of Srinivasan to support MPLS as taught by Gan in order to adapt to specific circuit oriented network [0005].

Regarding to claim 19, Gan teaches the control plane includes at least one of Label Distribution Protocol (LDP) and ReSerVation Protocol (RSVP) [0044].

Regarding to claim 20, Gan teaches the connection is a Label Switched Path (LSP) [0042].

Regarding to claim 21, Srinivasan teaches the user connection monitoring function monitors continuity along the connection (Column 16 Line 58-66).

Regarding to claim 22, Srinivasan teaches the user connection monitoring function monitors at least one of: data corruption on the connection, data loss on the connection, latency along the connection, and misinsertion of data on the connection (Column 16 Line 58-66).

Regarding to claim 34, Rochberger teaches a data communication network, comprising: a source node 12; a destination node 14 operably coupled to the source

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node via a first connection that carries a data stream, wherein the source node injects diagnostic traffic into the data stream, wherein the destination node monitors the diagnostic traffic (step 50 in Figure 4) in the data stream; and a control block 12, 14 operably coupled to the source node and the destination node, wherein when status of a selected characteristic associated with the diagnostic traffic is determined to be unacceptable, the control block performs a control plane reroute that establishes a second connection that couples the source node and the destination node (step 60 in Figure 4) wherein the diagnostic traffic verifies that a level of user plane performance that has been guaranteed to a user is being provided (step 62 in Figure 4), wherein the control block performs an evaluation of the second connection (step 62 in Figure 4), wherein the data stream is rerouted over the second connection only if a status of the second connection's selected characteristic is better than the status of the selected characteristic ("YES" from the decision step 62 in Figure 4). Rochberger, however, does not teach the diagnostic traffic includes operation and management (OAM) performance monitoring traffic. Srinivasan teaches the diagnostic traffic includes operation and management (OAM) performance monitoring traffic (Column 16 Line 58-66). It would have been obvious to one skilled in the art to modify Rochberger to use OAM performance monitoring traffic as taught by Srinivasan in order to detect link failure (Column 16 Line 58-62). Rochberger in view of Srinivasan, however, does not teach the data stream is a Multi-Protocol Label Switching (MPLS) data stream and wherein the first and second connections correspond to label switched paths. Gan teaches the data stream is a Multi-Protocol Label Switching (MPLS) data stream [0040]

and wherein the first and second connections correspond to label switched paths [0042]. It would have been obvious to one skilled in the art to modify Rochberger in view of Srinivasan to support MPLS and LSP as taught by Gan in order to adapt to specific circuit oriented network [0005].

Response to Arguments

7. Applicant's arguments filed 07/30/2010 have been fully considered but they are not persuasive. In response to page 9, the applicant argues that Rochberger does not teach "...better latency performance". Rochberger teaches rerouting based on parameters of delay (Column 11 Line 12-26). The applicant further argues that Rochberger does not teach "...in the control plane...". Rochberger teaches starting rerouting by control signals defined by ATM forum (Column 13 Line 22-25). The applicant further argues that Rochberger does not teach "...in the user plane". Rochberger teaches detecting delay increases in the user plane (Column 13 Line 1-4). In response to page 10-11, the applicant argues that Rochberger does not teach "...a new connection selected characteristic...". Rochberger teaches rerouting based on parameters of delay (Column 11 Line 12-26). The applicant further argues that Rochberger does not teach "...initiating control plane rerouting...". Rochberger teaches starting rerouting by control signals defined by ATM forum (Column 13 Line 22-25). The applicant further argues that Srinivasan does not teach OAM continuity checking. Srinivasan teaches checking continuity using OAM (Column 16 Line 56-66). In response to page 11-13, the applicant argues that claims 2-9 and 12 are allowable because they depend on claim 1. See examiner's response regarding pages 10-11

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above. In response to page 13-14, the applicant argues that Rochberger does not teach "...exceeds a predetermined threshold", "...wherein each selected characteristic of the plurality of selected characteristics has a corresponding predetermined threshold..." and "...the corresponding predetermined threshold for the plurality of selected characteristics...". Rochberger teaches "optimization value" for each optimization type and an optimization percentage (Column 11 Line 27-51). In response to page 14-15, the applicant argues that Rochberger does not teach "...the second connection selected characteristic...". Rochberger teaches rerouting based on parameters of delay (Column 11 Line 12-26). The applicant further argues that Rochberger does not teach "...the control block performs a control plane reroute that establishes a second connection that couples the source node and the destination node...". Rochberger teaches starting rerouting by control signals defined by ATM forum (Column 13 Line 22-25). The applicant further argues that Srinivasan does not teach OAM performance monitoring traffic. Srinivasan teaches checking continuity using OAM (Column 16 Line 56-66) which monitors the performance of a link. The applicant further argues that Rochberger does not teach "wherein the control block performs...". Rochberger teaches the control block performing an evaluation of the second connection (Column 13 Line 14-36). The applicant further argues that Rochberger does not teach "wherein the diagnostic traffic verifies...". Rochberger teaches the control block performing an evaluation of the second connection (Column 13 Line 14-36). In response to pages 15-16, the applicant argues that Srinivasan does not teach "...a plurality of ATM cells". Srinivasan teaches a plurality of ATM cells

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(Column 5 Line 2-8, Column 6 Line 13-26). The applicant further argues that Srinivasan does not teach “...(OAM) continuity checking traffic”. Srinivasan teaches checking continuity using OAM (Column 16 Line 56-66). In response to pages 16-21, the applicant argues that Rochberger does not teach “...a predetermined threshold” and “...when loss of continuity is detected for a time period...”. Rochberger teaches detecting a loss of continuity for a predetermined time period (Column 13 Line 14-15). The applicant further argues the examiner does not allege anything to combining the teachings of the cited references. See the rejection of claim 23 above which claim 28 depends on. The applicant further argues that Rochberger does not teach “wherein the predetermined threshold is configurable”. Rochberger teaches configurable the optimization value/percentage (Column 11 Line 27-51). The applicant further argues that Srinivasan does not teach “...wherein the first and second connections are soft permanent virtual circuits...”. Srinivasan teaches SPVC connections (Column 2 Line 32). The applicant further argues that Srinivasan does not teach “wherein the first and second connections are switched connections”. Srinivasan teaches switched connections (Figure 1). The applicant further argues that Srinivasan does not teach “at least one of” the elements recited in claim 35. Srinivasan teaches monitoring congestion patterns (Column 2 Line 57-61). The applicant further argues that Rochberger does not teach “...at least one new connection-characteristic of the new connection...”. Rochberger teaches the control block performing an evaluation of the second connection (Column 13 Line 14-36). The applicant further argues that Rochberger does not teach “initiating control plane rerouting of the connection”.

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Rochberger teaches starting rerouting by control signals defined by ATM forum (Column 13 Line 22-25). The applicant further argues that Srinivasan does not teach "...OAM continuity checking traffic". Srinivasan teaches checking continuity using OAM (Column 16 Line 56-66). The applicant further argues that Srinivasan does not teach "wherein the first and second connections are soft permanent virtual circuits ". Srinivasan teaches SPVC connections (Column 2 Line 32). The applicant further argues that Srinivasan does not teach "wherein the connection is switched virtual connection (SVC)". Srinivasan teaches SVC (Column 7 Line 61-65). The applicant further argues that Srinivasan does not teach "wherein the control plane is a signaling plane". Srinivasan teaches the control plane is a signaling plain (Column 5 Line 43 – Column 6 line 12, see Figure 3). The applicant further argues that Srinivasan does not teach "wherein the signaling plane uses private network-to-network interface (PNNI)". Srinivasan teaches the signaling plane uses private network-to-network interface (PNNI) 56. The applicant further argues that Srinivasan does not teach "wherein detecting a fault further comprises detecting a fault using operation and management (OAM) services running within the user plane". Srinivasan teaches detecting a fault using operation and management (OAM) services running within the user plane (Column 16 Line 58-62). The applicant further argues that Srinivasan does not teach "wherein the connection is a soft permanent virtual connection (SPVC)". Srinivasan teaches SPVC connections (Column 2 Line 32). In response to pages 21 and 23, the applicant argues that Gan teaches away from the combination with teachings of Rochberger in view of Srinivasan. The examiner could not follow the applicant reasoning which is based on

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“The connection-oriented network has an advantage over other network models...”.

Gan does not teach away from the combination with teachings of Rochberger in view of Srinivasan [0003]. Examiner also notes Gan recites MPLS as only one type of many connection oriented frameworks [0040]. In response to pages 22-23, the applicant argues there is no motivation to combination of cited references for the dependent claims 19-22. See the rejection of claim 18 above which they all depend on.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CLEMENCE HAN whose telephone number is (571) 272-3158. The examiner can normally be reached on Monday-Friday 8-4.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ricky Ngo/
Supervisory Patent Examiner, Art Unit 2464

/C. H./
Examiner, Art Unit 2464